## ABSTRACT

A method for counting somatic cells or fat droplets in milk on-line during milking by an automated or semi-automated milking system comprising the steps of: flowing milk as milked by the milking system through a measuring chamber (59); illuminating milk that flows through the measuring chamber; and recording multiple two-dimensional digital images of illuminated milk that flows through the measuring chamber, wherein the images are recorded through a lens system (49) to preferably obtain a spatial resolution better than about 5 microns in the images. Finally, a somatic cell or fat droplet count score of the milk is determined from the images by means of digital image processing, preferably including the use of neural networks.

(Fig. 2)